

118TH CONGRESS
2D SESSION

S. 4952

To establish a Center of Excellence for Dark and Quiet Skies, and for other purposes.

IN THE SENATE OF THE UNITED STATES

AUGUST 1, 2024

Mr. HICKENLOOPER (for himself and Mr. CRAPO) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To establish a Center of Excellence for Dark and Quiet Skies, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Dark and Quiet Skies
5 Act of 2024”.

6 **SEC. 2. PURPOSE.**

7 The purpose of this Act is to increase participation
8 and collaboration between Federal agencies and the pri-
9 vate sector to research, develop, and deploy mitigation
10 techniques on a voluntary basis to protect the integrity

1 of federally funded scientific research observing the sky
2 and celestial bodies.

3 **SEC. 3. CENTER OF EXCELLENCE FOR DARK AND QUIET**
4 **SKIES.**

5 (a) DEFINITIONS.—In this section:

6 (1) APPROPRIATE COMMITTEES OF CON-
7 GRESS.—The term “appropriate committees of Con-
8 gress” means—

9 (A) the Committee on Appropriations, the
10 Committee on Energy and Natural Resources,
11 and the Committee on Commerce, Science, and
12 Transportation of the Senate; and

13 (B) the Committee on Appropriations, the
14 Committee on Natural Resources, the Com-
15 mittee on Energy and Commerce, and the Com-
16 mittee on Space, Science, and Technology of
17 the House of Representatives.

18 (2) CENTER.—The term “Center” means the
19 Center of Excellence for Dark and Quiet Skies es-
20 tablished under subsection (b)(1).

21 (3) ELIGIBLE ENTITY.—The term “eligible enti-
22 ty” means—

23 (A) a nonprofit organization;

24 (B) a Federal laboratory;

25 (C) an institution of higher education;

1 (D) a Native entity;

2 (E) an observatory participating in a fed-
3 erally funded research project; and

4 (F) a consortium of 1 or more entities de-
5 scribed in subparagraphs (A) through (E), pri-
6 vate entities, or astronomers.

7 (4) FEDERAL LABORATORY.—The term “Fed-
8 eral laboratory” has the meaning given to the term
9 in section 4 of the Stevenson-Wydler Technology In-
10 novation Act of 1980 (15 U.S.C. 3703).

11 (5) INSTITUTION OF HIGHER EDUCATION.—The
12 term “institution of higher education” means an in-
13 stitution of higher education, as defined in section
14 101(a) of the Higher Education Act of 1965 (20
15 U.S.C. 1001(a)).

16 (6) NATIVE ENTITY.—The term “Native entity”
17 means—

18 (A) a Tribal government;

19 (B) an Alaska Native Village or Regional
20 or Village Corporation, as defined in or estab-
21 lished pursuant to the Alaska Native Claims
22 Settlement Act (43 U.S.C. 1601 et seq.); and

23 (C) a Native Hawaiian organization, as
24 that term is defined in section 7517 of title 20,
25 United States Code.

1 (7) SCIENTIFIC ACTIVITY.—The term “scientific
2 activity” means federally funded scientific activities
3 observing the sky or celestial bodies using—

4 (A) radio observations; or

5 (B) optical observations, including photo-
6 metric or spectroscopic data.

7 (8) UNDER SECRETARY.—The term “Under
8 Secretary” means the Under Secretary of Commerce
9 for Standards and Technology.

10 (b) ESTABLISHMENT OF CENTER.—

11 (1) IN GENERAL.—Subject to availability of ap-
12 propriations, not later than 1 year after the date of
13 enactment of this Act, and after convening a gaps
14 analysis workshop with the Office of Space Com-
15 merce of the National Oceanic and Atmospheric Ad-
16 ministration and the National Science Foundation to
17 assess the present status of the objectives described
18 in paragraph (2), the Under Secretary shall award
19 a grant, on a competitive basis, to an eligible entity
20 to establish and operate a Center of Excellence for
21 Dark and Quiet Skies.

22 (2) OBJECTIVES.—Prior to awarding a grant
23 under paragraph (1), the Under Secretary shall es-
24 tablish the objectives of the Center, including how

1 the Center, to the maximum extent practicable,
2 will—

3 (A) work with the satellite industry and as-
4 tronomical community to develop and dissemi-
5 nate best practices to limit optical and radio in-
6 terference with scientific activity, including de-
7 veloping consistent optical brightness measure-
8 ments;

9 (B) identify existing facilities within the
10 United States (as of the date of establishment
11 of the objectives) to be used for testing inter-
12 ference mitigation or suggest adaptations to ex-
13 isting facilities for such purpose;

14 (C) conduct transdisciplinary research, de-
15 velopment, and demonstration projects with an
16 emphasis on tracking, identifying, modeling,
17 characterizing, and minimizing potential inter-
18 ference with scientific activity, and shall include
19 methods to—

20 (i) reduce optical impact of satellites
21 in photometric and spectroscopic observa-
22 tions;

23 (ii) reduce radio frequency impact of
24 satellites on radio observations;

- 1 (iii) quantify, assess, model, or predict
2 potential interference with scientific activ-
3 ity;
- 4 (iv) promote consistency, where appli-
5 cable, with domestic and international ef-
6 forts to protect scientific research; and
- 7 (v) assess methods and techniques as-
8 tronomers can take to avoid receiving in-
9 terference from satellite activity, such as
10 hardware-related technological innovations;
- 11 (D) publish the results of transdisciplinary
12 research carried out by the Center in a publicly
13 accessible repository with appropriate protec-
14 tions, as determined by the Under Secretary, to
15 protect proprietary or confidential information;
- 16 (E) work with the satellite industry to de-
17 velop and disseminate voluntary guidelines and
18 evidence-based best practices to mitigate optical
19 and radio interference with scientific research;
20 and
- 21 (F) achieve any other goal that the Under
22 Secretary determines necessary as a result of
23 the workshop convened pursuant to paragraph
24 (1).

1 (3) CONSULTATION.—In establishing the Cen-
2 ter under paragraph (1) and determining the objec-
3 tives of the Center under paragraph (2), the Under
4 Secretary shall consult with—

5 (A) the Department of State;

6 (B) the Federal Aviation Administration;

7 (C) the Federal Communications Commis-
8 sion;

9 (D) the National Aeronautics and Space
10 Administration;

11 (E) the National Oceanic and Atmospheric
12 Administration;

13 (F) the National Science Foundation;

14 (G) the National Telecommunications and
15 Information Administration;

16 (H) the Office of Space Commerce; and

17 (I) private entities involved in in-space ac-
18 tivities, space surveillance activities, or astron-
19 omy activities, including not less than 1 of each
20 of the following:

21 (i) Satellite and spacecraft operators,
22 including a diverse range of constellation
23 sizes, missions, and purposes.

24 (ii) A space situational awareness pro-
25 vider.

1 (iii) A nonprofit organization.

2 (iv) Federal laboratories and National
3 observatories, including a diverse range of
4 scientific purposes.

5 (v) An institution of higher education.

6 (vi) A Native entity.

7 (c) APPLICATION; AWARD BASIS.—

8 (1) IN GENERAL.—An eligible entity desiring a
9 grant under subsection (b)(1) shall submit an appli-
10 cation at such time, in such manner, and containing
11 such information as the Under Secretary may re-
12 quire.

13 (2) CONSIDERATIONS.—In reviewing applica-
14 tions under this subsection and awarding a grant
15 under subsection (b)(1), the Under Secretary shall
16 consider the degree to which—

17 (A) the eligible entity submitting the appli-
18 cation has a plan to financially sustain the ac-
19 tivities of the Center after the conclusion of the
20 grant period, including with matching funds for
21 any Federal funding dedicated to the Center;
22 and

23 (B) the degree to which the eligible entity
24 proposes to engage small businesses in the ac-
25 tivities of the Center.

1 (d) COORDINATION.—The Under Secretary shall en-
2 sure the coordination, and avoid unnecessary duplication,
3 of activities of the Center with the research, development,
4 or demonstration activities of—

5 (1) the Department of Energy or Federal lab-
6 oratories;

7 (2) the National Aeronautics and Space Admin-
8 istration;

9 (3) the National Oceanic and Atmospheric Ad-
10 ministration;

11 (4) the National Science Foundation; and

12 (5) The National Telecommunications and In-
13 formation Administration.

14 (e) DURATION.—

15 (1) IN GENERAL.—Subject to appropriations
16 and paragraph (2), the Center is authorized to carry
17 out activities for a period of 5 years.

18 (2) TERMINATION.—The Under Secretary may
19 terminate the Center in the event the Under Sec-
20 retary determines the Center is underperforming
21 during the performance period described in para-
22 graph (1).

23 (f) REPORTS TO CONGRESS.—Not later than 18
24 months after the date of enactment of this Act, and annu-
25 ally thereafter through fiscal year 2029, the Under Sec-

1 retary shall prepare and submit a report to the appro-
2 priate committees of Congress—

3 (1) providing an evaluation of the Center’s ef-
4 fectiveness in achieving its objectives under sub-
5 section (b)(2); and

6 (2) describing benchmarks the Center will seek
7 to accomplish in the forthcoming year.

8 (g) FUNDING.—

9 (1) AUTHORIZATION OF APPROPRIATIONS.—

10 There is authorized to be appropriated to carry out
11 this section \$20,000,000 for the period of fiscal
12 years 2025 through 2029.

13 (2) RULE OF CONSTRUCTION.—Nothing in this
14 section shall be construed to require the Under Sec-
15 retary to carry out this section using amounts ap-
16 propriated or otherwise made available to the De-
17 partment of Commerce for other purposes.

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